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EXAMINER

WONG, ALBERT KANG

| ART UNIT | PAPER NUMBER |
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2635

DATE MAILED: 11/05/2003

16

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/408,045

Applicant(s)

TUBEL ET AL.

Examiner

Albert K Wong

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 8/11/2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-34, 42-59 and 61-73 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-34, 42-59, and 61-73 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

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1. This Office action is in response to the RCE filed August 11, 2003. Claims 1-34, 42-59, and 61-73 are pending. Claims 35-41 and 60 have been cancelled and claims 42-44, 46, 57, and 59 are currently amended. New claims 65-73 have been entered and the remarks considered.

Prior rejections withdrawn

2. The prior rejections of the claims have been withdrawn in view of the amendments and remarks.

Prior rejections maintained

3. NONE.

New rejections

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-12, 20-21, 24-26, 32, and 71-73 are rejected under 35 U.S.C. 102(b) as being anticipated by Tubel '165.

Regarding claim 1, the claimed downhole production or injection wells are discussed in col. 1. The control system including surface control, sensors, downhole devices, and controllers are taught in col. 2 and shown generally in Figures 1, 4, and 6. The claimed control system is the combination of the surface control elements on the platforms, the sensors under the well, the downhole devices that control production and gather data, and the elements that make-up the LAN which include the satellite, the ground stations, and the elements on other platforms. The remote controller is considered the ground station (element 10). The server is inherent within the

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satellite or computers on the various platforms because they are a part of a LAN. See cols. 13-14 for a teaching of the functions of the LAN elements. A LAN includes a server which functions as a node for the transmission of data between the nodes. The system in Tubel fulfills the definition of a LAN as cited by the Microsoft dictionary reference. By sending data from a platform through another platform or via satellite to the remote controller (ground station), the remote controller is in communication with the surface system through a server.

Regarding claim 2, see col. 2, lines 30-35.

Regarding claim 3, inherent in the control of a downhole device located in a production well is the communication with the device.

Regarding claim 4, see col. 8, lines 18-25.

Regarding claims 5 and 40, col. 4 teaches the sensors located downhole. Since there is no discussion regarding the removal of the sensors, these are regarded to be permanent.

Regarding claim 6, the use of retrievable sensors is conventional in the oil well art. Retrievable sensors provide the obvious advantage of being reusable.

Regarding claim 7, the system is described to be electrical.

Regarding claims 8 and 9, col. 2 describes an artificial lift system and states that such a system may be programmable.

Regarding claim 10, see col. 2, lines 20-26.

Regarding claim 11, the monitoring of mechanical machinery to anticipate failure is well known. It would have been obvious to monitor the equipment as well as the well conditions to maximize the efficiency of production. Col. 3, lines 20-23 teaches a system that monitors the cable integrity.

Regarding claim 12, see claim 7.

Regarding claims 20-21 and 32 the communication device is taught in col. 8.

Regarding claim 24, the wells are shown in Figure 1. The artificial lift system has been addressed in claim 8 and the control system has been addressed in claim 1. The use of formation sensors is disclosed in the abstract.

Regarding claim 25, the monitoring of mechanical machinery to anticipate failure is well known. It would have been obvious to monitor the equipment as well as the well conditions to maximize the efficiency of production. Col. 3, lines 20-23 teaches a system that monitors the cable integrity.

Regarding claim 26, see claim 8 above.

Regarding claims 71-73, since these claims are dependent on claim 2 and claim 2 recites a set where only one element is selected from the group, the teaching of one element satisfies the limitation of the claim. Tubel teaches a sliding sleeve or a packer and thus meets the limitation of claim 2. Claims 71-73 do nothing more than recite specific elements in the group recited in claim 2. Thus, it is not required to show these limitations if another member of the group is selected.

6. Claims 13-19 and 27-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tubel '165 as applied to claims 1 and 24 above, and further in view of Patterson.

Regarding claims 13 and 27, Tubel does not teach the use of a retrievable pump, but teaches the use of pumps for production or injection wells. Patterson teaches the use of a retrievable pump for production purposes. It would have been obvious to combine the

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references since they are in the same field of endeavor. The use of a retrievable pump provides obvious advantage of reusing the pump.

Regarding claim 14, the use of sensors with control systems is conventional and provides the obvious advantage of anticipating problems.

Regarding claims 15 and 28, Patterson teaches the use of coiled tubing to install the pump.

Regarding claims 16 and 29, the pump is shown connected to an electric line for control purposes.

Regarding claims 17 and 30, col. 3, lines 65-end teaches the use of a submersible motor.

Regarding claims 18-19 and 31, the connection and control of the pump would have been obvious since this is similar to the control of any other component in the well bore.

7. Claims 22-23, 33-34, 57-59, and 61-70 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tubel '165 and Salvo '205.

Regarding claim 22, Tubel does not teach a remote controller comprising a computer with internet access. Salvo teach in figure 1 and col. 4, lines 50-62 a monitor and control system for a plurality of wells with a remote controller with internet access. Since access is from a single user site to a plurality of well monitors, communication is via a server (item 55 or 20). One of ordinary skill in the art would be familiar with various remote monitor/control system pertaining to wells. It would have been obvious to use a computer with internet access so that the user can access the system from virtually any location via the communication link as taught by Salvo.

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Regarding claim 23, both Tubel teaches the use of satellites as a communication channel to link platforms which contain servers with the remote controller.

Regarding claims 33 and 34, these limitations have been addressed in claims 22 and 23.

Regarding claim 57, Tubel '165 teaches a tool body, sensor, controller and data acquisition system. Tubel teaches a server in communication with the controller and data acquisition system where the server is in communication with a remote controller in a remote location. Tubel does not teach the remote controller communicating through the server via the internet. First, Salvo teaches the use of a remote controller communicating with a server via the internet. The motivation for combining this teaching with Tubel have been addressed above.

Regarding claim 58, the communication device is merely the cable linking the server with the controller.

Regarding claim 59, Tubel shows the use of a satellite system for communication between the well and a remote control location.

Regarding claims 61-64, these limitations have been addressed in prior claims.

Regarding claim 65, the surface control and data acquisition system, sensors, downhole devices, and remote controller has been discussed above and taught by Tubel. See claim 24. Tubel does not teach the remote controller controlling the downhole devices by sending commands via the internet to the server. As discussed above, Salvo teaches this function with the motivation for combining such a feature with a well monitoring and control system.

Regarding claim 66, the claimed communication device is the communication link shown in Figure 1 of Salvo.

Regarding claim 67, Salvo teaches the various communication links in col. 4, lines 50-60.

Regarding claim 68, it would have been obvious to one of ordinary skill in the art that the satellite may be placed anywhere in the communications channel. Satellites provides the advantage of inexpensive communication over vast distances.

Regarding claims 69 and 70, these limitations have been addressed above.

8. Claims 42-56 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tubel '165 and Rinaldi and further in view of Salvo.

Regarding claim 42, Tubel discloses the transmission of data collected by sensor modules to a control system which evaluates the data and optimizes the parameters. Tubel also discloses the transmission of signals to a remote controller. Tubel does not explicitly teach the use of optimization software. Rinaldi teaches such a program for production wells. Since they are in the same field of endeavor, it would have been obvious to combine the references to gain the advantages taught in each. Tubel also does not disclose a computer with internet access. Salvo teaches the use of the Internet to access data from a plurality of wells. As stated above the access is through a server. Further, it would have been obvious to access the system via a computer through the internet because the user can access the system from virtually any location.

Regarding claim 43, the use of memory to store data is conventional and inherent in the system of Tubel. Processed data must be stored at some point.

Regarding claim 44, as recited above, the monitoring of equipment to anticipate problems would have been obvious.

Regarding claim 45, see Figure 1 of Tubel.

Regarding claim 46, the system of Tubel allows the surface unit to modify the operation downhole. It would have been obvious that the command may be sent from a variety of

locations since the system stores the measured data in a network. Remote control provides the obvious advantage of being able to locate workers offsite.

Regarding claim 47, it would have been obvious that data is accessible at any point in the network of Tubel.

Regarding claims 48 and 49, Tubel teaches these features.

Regarding claim 50, the satellite interlinks the wells to a central control in Tubel and thus the command may be sent from any location.

Regarding claim 51, the use of digital or analog communications is inherent.

Regarding claim 52, see Tubel.

Regarding claim 53 and 54, Rinaldi teaches the control of chemicals and the injection of steam to optimize production.

Regarding claim 55-56, Tubel teaches the advantage of monitoring water and formation influx.

Response to remarks

9. Applicant's remarks are based on two limitations. First, the prior art applied do not teach or suggest the use of a remote controller to communicate through a server with the surface system or devices connected thereto. As shown in the dictionary definitions a LAN by default uses a server to deliver data. Tubel meets the definition of a LAN and thus the various elements connected together at the platform, the satellite and even the remote station would include a server element.

Second, the prior art applied do not teach or suggest a remote controller communicating via the internet. As noted in the dictionary definitions cited, the internet/Internet has two

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meanings. The first merely requires an internetwork. Tubel alone would satisfy this broad definition. The Examiner has assumed that the latter definition was intended by the applicant based on the specification. The definition of the Internet merely requires that the network uses the TCP/IP protocols to communicate and is connected to another node. It would have been obvious to use the protocol and interconnection to allow the remote computer access to the Internet to allow the user to control the well system from any location with Internet access. Further, Salvo teaches a well control and monitoring system accessed remotely via servers and the Internet. Salvo further teaches the motivation for including Internet access.

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Tabanou teaches another example of a well monitoring system using a computer with Internet access.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Albert K Wong whose telephone number is 703-305-8884. The examiner can normally be reached on M-Th.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Horabik can be reached on 703-305-4704. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-4700.



Albert K. Wong
October 30, 2003